

*CLAIM AMENDMENTS*

1. (Currently Amended) A semiconductor device comprising:  
a semiconductor substrate;  
a channel layer ~~formed~~ on the semiconductor substrate;  
a Schottky layer ~~formed~~ on the channel layer;  
a first layer having a narrower band gap than the Schottky layer, the first layer ~~inserted in~~ being disposed within the Schottky layer;  
a second layer having a band discontinuity with the Schottky layer, the second layer ~~inserted in being disposed within~~ the Schottky layer, ~~and the second layer disposed~~ on the first layer;  
a gate electrode disposed on the Schottky layer;  
first and second n<sup>+</sup> layer formed layers on the Schottky layer on both opposite sides of the gate electrode, ~~the n<sup>+</sup> layer having discontinuous parts positioned on the gate electrode;~~  
a source electrode ~~formed~~ on the first n<sup>+</sup> layer; and  
a drain electrode ~~formed~~ on the second n<sup>+</sup> layer.

2. (Currently Amended) ~~A~~ The semiconductor device according to claim 1, wherein the first layer has a lattice ~~defect on boundary face defects at an interface~~ between the first layer and the Schottky layer.

3. (Currently Amended) A semiconductor device comprising:  
a channel layer ~~formed~~ on a semiconductor substrate;  
a Schottky layer ~~formed~~ on the channel layer;  
a p-type-doped layer ~~inserted in~~ disposed within the Schottky layer;  
an n-type-doped layer ~~inserted in the~~ disposed within the Schottky layer, ~~the n-type doped layer disposed~~ on the p-type-doped layer;  
a gate electrode disposed on the Schottky layer;  
first and second n<sup>+</sup> layer formed layers on the Schottky layer on both opposite sides of the gate electrode, ~~the n<sup>+</sup> layer having discontinuous parts positioned on the gate electrode;~~  
a source electrode ~~formed~~ on the first n<sup>+</sup> layer; and  
a drain electrode ~~formed~~ on the second n<sup>+</sup> layer.

4. (Currently Amended) ~~A~~ The semiconductor device according to claim 1, further comprising a p<sup>+</sup> contact layer connecting the source electrode with the Schottky layer, the p<sup>+</sup> contact layer being disposed ~~below~~ opposite the source electrode.

5. (Currently Amended) ~~A~~ The semiconductor device according to claim 1, further comprising a via-hole penetrating from the source electrode to the semiconductor substrate.

6. (Currently Amended) A semiconductor device comprising:  
a channel layer ~~formed~~ on a semiconductor substrate;  
a Schottky layer ~~formed~~ on the channel layer;  
a gate electrode disposed on the Schottky layer;  
a compound semiconductor layer containing phosphorus (P) and covering ~~the surface~~  
of the Schottky layer;

first and second n<sup>+</sup> layer-formed layers on the compound semiconductor layer containing phosphorus (P), on both opposite sides of the gate electrode, ~~the n<sup>+</sup> layer having discontinuous parts positioned on the gate electrode;~~

a source electrode ~~formed~~ on the first n<sup>+</sup> layer; and

a drain electrode ~~formed~~ on the second n<sup>+</sup> layer.

7. (Currently Amended) ~~A~~ The semiconductor device according to claim 6, further comprising:  
a first pair of first and second compound semiconductor layers containing phosphorus (P) ~~which sandwich~~ sandwiching the first n<sup>+</sup> layer; and  
a second pair of first and second compound semiconductor layers containing phosphorus (P) ~~which sandwich~~ and sandwiching the second n<sup>+</sup> layer.

8. (Currently Amended) ~~A~~ The semiconductor device according to claim 6, further comprising:  
a first pair of ~~third first~~ and ~~fourth second~~ compound semiconductor layers containing phosphorus (P) sandwiched between the first n<sup>+</sup> layer and the Schottky layer;  
a first n<sup>-</sup> layer sandwiched between the first pair of ~~third first~~ and ~~fourth second~~ compound semiconductor layers containing phosphorus (P).  
a second pair of ~~third first~~ and ~~fourth second~~ compound semiconductor layers containing phosphorus (P) sandwiched between the second n<sup>+</sup> layer and the Schottky layer;  
and

a second n- layer sandwiched between the second pair of ~~third~~ first and ~~fourth~~ second compound semiconductor layers containing phosphorus (~~P~~).

9. (Currently Amended) ~~A~~ The semiconductor device according to claim 6, wherein the compound semiconductor layer containing phosphorus (~~P~~) is ~~made of~~ InGaP.

10. (Currently Amended) ~~A~~ The semiconductor device according to claim 1, further comprising first and second electron supply layers ~~which sandwich~~ sandwiching the channel layer.